**In the Garden with Bryce Lane: (Roots, Stems, Leaves, Seeds & Flowers)- P:2**

**In the Garden Episode #5- Roots**

1. What are the six plant organs?
2. What is the number one absorptive organ in a plant? What does this organ absorb?
3. What are the functions of roots?
4. Are adventitious roots normal in a plant? Are they different from primary and secondary roots?
5. What are tap roots and tuberous roots?
6. Give two examples of plants that have aerial roots.
7. What is a parasitic plant? Give an example.
8. What are the three main types of tree roots? Tell if each is shallow or deep.
9. What can you do to increase the oxygen levels in your soil?
10. What is significant about the Joe Pye Weed’s roots?

**In The Garden Episode #6- Leaves and Stems**

1. What are the functions of stems?
2. What are typical stems classified by?
3. What are the types of modified stems?
4. What are primary and secondary meristems responsible for?
5. Where do plants grow in length?
6. What is the function of xylem and phloem tissue?
7. What are the functions of leaves?
8. What is a simple leaf?
9. What are compound leaves?
10. What is the importance of knowing whether a plant is simple or compound?

**In the Garden Episode #12- Flowers**

1. What is the most important reproductive part of a plant?
2. What are the four basic parts of a flower?
3. What is the difference between a perfect flower, and an imperfect flower? What terms are used to describe the two types of imperfect flowers?
4. What term is used to describe a plant that has both staminate and pistilate flowers? What plant has these features?
5. What is a plant called when it has male and female plants within the same species? Give one example.
6. What is pollination and when is pollen not accepted?
7. What is the result of successful pollination?
8. What are plants called that have the ability to accept their own pollen? What type of plants can be used for cross pollination?
9. Describe one method of overcoming self-incompatibility.
10. Name one plant that is pollinated by butterflies. What type of flower do butterflies prefer?

**In the Garden Episode # -Seeds**

1. What happens to the ovary of the flower?
2. What is Bryce Lane’s definition for a seed?
3. What does seed viability mean?
4. What is the optimum temperature range for seeds? Where should you store them to increase their longevity?
5. How old was the oldest seed from a Lotus that germinated in China?
6. What is the test you can do for some seeds to see if a seed is viable?
7. What are three ways that you can scarify a seed?
8. How can you stratify seeds?
9. What is the order: scarify or stratify for double dormant seeds? Which is first?
10. The plant of the week is *Osmanthus heterophyllus*. Why does this plant have the name ‘Goshiki’?

**In The Garden Answer Keys Episodes 5, 6 & 12**

Video #12 answer key

1. The flower
2. The stamen, sepals, petals, and pistil
3. Perfect flowers have both sexual parts and imperfect flowers are missing one of the two sexual parts. The two terms are staminate and pistillate
4. Monoecious, begonia or corn.
5. Dioecious, Carolina Cardinal Holly
6. Pollination describes when pollen lands on the stigma and is accepted, pollen cannot be accepted when it has landed on a plant of a different species.
7. Fertilization.
8. Self-compatible, self-incompatible
9. Have your neighbor plant a different cultivar so they can pollinate eachother. Take cuttings of a different cultivar, set them in water, and place it near the self-incompatible tree so it can be pollinated.
10. Lantana and butterfly bush, they prefer tubular flowers for their mouth part.

In The Garden #5 Answer Key

1. The six plant organs are the roots, stem, leaves, flower, fruit, and seeds.

2. The roots. They absorb water and nutrition.

3. Absorption, anchorage, accommodation (storage)

4. No. No, they are no different.

5. Tap roots are large, swollen primary roots. Tuberous roots are large, swollen secondary roots.

6. Orchids, Spanish moss, tank plants, and tallandsia.

7. A plant that has aerial roots that lives off of other plants. Ex: mistletoe.

8. Supporting, transporting, and absorbing. Tree’s roots are shallow.

9. Opening holes in the soil,

10. The root of the Joe Pye Weed can be used for medicinal purposes.

In The Garden #6 Answer Key

1. Storage, support, transportation, and food production.

2. Typical stems are classified by nodes and internodes.

3. Types of modified stems are stolons, rhizomes, and tubers.

4. Primary meristems: growth in length. Secondary meristems: growth in girth.

5. Plants grow in length from the tip.

6. Xylem tissue transports water and nutrition upwards. Phloem tissue transports sugars downward.

7. Food production and storage.

8. Simple leaves only have one leaf.

9. Compound leaves have more than one leaf.

10. Knowing whether a plant is simple or compound helps us identify what the plant is.